

REMARKS / DISCUSSION OF ISSUES

Claims 1, 2, 4-8, 10, 15, and 16 are pending. Claims 1, 7, and 15 are independent. The title is amended to further clarify the invention to which the claims are directed. Claim 15 is amended herein and is directed to statutory subject matter. No new matter is added.

Specification

In the non-final Office Action dated February 19, 2009, the Examiner alleges that the title of the invention is not descriptive. The Applicants hereby amend the title to the invention substantially per the Examiner's suggestion.

Claim Rejections – 35 U.S.C. 101

Claims 15 and 16 stand rejected under 35 U.S.C. 101 as allegedly not falling within one of the four statutory categories of the invention.

Claim 15 is amended to tie the underlying subject matter to a statutory category and as such, includes patentable subject matter. Claim 16 depends from claim 15 and inherits all of the respective features of claim 15. As such, withdrawal of the rejection of claims 15 and 16 under 35 U.S.C. 101 are respectfully requested.

Claim Rejections – 35 U.S.C. 103

Claims 1, 2, 4-8, 10, 15, and 16 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over US Patent 7,292,647 (Giannakis) in view of US Patent 6,442,152 (Park). These rejections are respectfully traversed.

Applicant respectfully submits that there is no motivation for combining the references. The Office is required to provide some articulated reasoning supporting the combination, however no such reasoning was provided. The Office simply provides the combination without any factual support.

Furthermore, the combination does not teach the claimed invention as admitted in the Office Action. On page 5 of the Office Action the Office points out that Park et al. discloses an interleaver and channel encoder where the interleaver interleaves the output of the channel encoder in contrast to applicant's claimed invention where an interleaver is coupled between the multiplexer and the channel encoder.

The Office simply argues that it would be obvious to include an interleaver and to place it between the multiplexer and channel encoder because the Office alleges the interleaver works independently of the other functions.

Applicant respectfully disagrees that providing the interleaver between the multiplexer and channel encoder would be simply a rearranging of parts having no effect or provide no difference or advantage. As described on page 12, lines 5-23 of applicant's specification the claimed arrangement of an interleaver coupled between the multiplexer and the channel encoder provides an advantageous mixing of the bits. The claimed feature is not simply a rearranging of parts involving only routine skill in the art.

Furthermore, the Office does not provide any explanation or supporting evidence as to why one of ordinary skill in the art would believe the interleaver works independently of the other functions and can be rearranged as claimed.

The Office is simply providing conclusory statements to support the combination of references and the further modification of the interleaver in making this rejection. Nowhere is there any suggestion in either reference or with the knowledge of one ordinarily skilled in the art to support these conclusory statements.

KSR makes clear that rejections on obviousness cannot be sustained by mere conclusory statements; instead KSR requires that an Examiner provide "some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness." (KSR Opinion at p. 14). An Examiner must "identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does," (KSR Opinion at p. 15). And, the Examiner must make "explicit" this rationale of "the apparent reason to combine the known elements in the fashion claimed," including a detailed explanation of "the effects of demands known to the design community or present in the marketplace" and "the background knowledge possessed by a person having ordinary skill in the art." (KSR Opinion at p. 14). Anything less than such an explicit analysis may not be sufficient to support a prima facie case of obviousness.

Applicant submits that the Office has not presented a prima facie case of obviousness and the rejection should be withdrawn.

Additionally, claim 1 recites in part: “a demultiplexer for demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver.” Emphasis added.

The Office Action points to Giannakis (at col. 2, line 13-col.3, line 7; col. 3, lines 46-60; and col. 5, line 44-col. 6, line 3) as allegedly disclosing the aforementioned feature as recited in claim 1.

Giannakis generally discloses linear complex-field encoding techniques. At col. 2, line 28, a linear encoder is designed so that maximum diversity order can be guaranteed without an essential decrease in transmission rate. Giannakis discusses several possible signal decoding techniques including an encoder that linearly encodes a data stream to produce an encoded data stream and a demodulator that produces a demodulated data stream. At col. 3, lines 46-60, Giannakis discloses that these techniques serve to robustify OFDM wireless transmissions against random frequency-selective fading for network nodes such as cellular distribution stations, a hub for wireless local area network, a cellular phone, a laptop, a PDA, etc. Col. 5, line 44-col. 6, line 3 teaches generating binary GF block codewords in an n-dimensional space.

However, the cited portions of Giannakis do not teach “a demultiplexer for demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver.” as recited in claim 1. Emphasis added. In fact Giannakis fails to disclose or even mention demultiplexing the information signals in dependence on a throughput of the subchannels as ordered by the receiver.

Like Giannakis, Park fails to disclose or mention “a demultiplexer for demultiplexing the information signal into a plurality of information subsignals in dependence on a throughput of the subchannels as ordered by the receiver” as recited in claim 1. Therefore, it is respectfully submitted that the combination of Giannakis and Park fails to teach or even disclose each and every element of Applicants’ claim 1. Thus, independent claim 1 is not rendered obvious and the rejection should be withdrawn.

Independent claims 7 and 15, while different from claim 1, include features which have similar distinguishing features as pointed out above. Thus, the analysis of these

independent claims is substantially analogous to the analysis of claim 1, as presented hereinabove. To avoid repetition, claims 7 and 15 will not be discussed in detail with the understanding that they are patentable at least for the same reasons as claim 1.

Claims 2, 4-6, 8, 10, and 16 depend from either of claims 1, 7, and 15, and inherit all of the respective features of each dependent claim's base claim. Thus, claims 2, 4-6, 8, 10, and 16 are patentable for at least the same reasons discussed above with respect to each independent claim, from which they depend, with each dependent claim containing further distinguishing patentable features.

It is respectfully submitted that the rejection of claims 1, 2, 4-8, 10, 15, and 16 has been overcome. Hence, withdrawal of the rejection under 35 U.S.C. 103(a) and early allowance of the claims are respectfully requested.

Conclusion

In view of the foregoing, Applicant respectfully requests that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Please charge any additional fees associated with this application to Deposit Account No. 14-1270.

Respectfully submitted,

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